

AMENDMENT TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

1-14. (Canceled)

15. **(Currently Amended)** A method for treating arthritis comprising administering by injection to a subject ~~an~~ a human anti-TNF α antibody, or an antigen-binding portion thereof, in a low dose of 0.01 – 0.1 mg/kg at a frequency of not more than once per week, such that the arthritis is treated, wherein the anti-TNF α antibody, or antigen-binding portion thereof, dissociates from human TNF α with a K_d of 1×10^{-8} M or less and a K_{off} rate constant of $1 \times 10^{-3} \text{ s}^{-1}$ or less, both determined by surface plasmon resonance, and neutralizes human TNF α cytotoxicity in a standard *in vitro* L929 assay with an IC_{50} of 1×10^{-7} M or less.

16. **(Original)** The method of claim 15, wherein the arthritis is rheumatoid arthritis.

17. **(Currently Amended)** The method of ~~any one of claims~~claim 15 or 16, wherein arthritis is treated by alleviating at least one symptoms~~symptoms~~ selected from the group consisting of bone erosion, cartilage erosion, inflammation, and vascularity.

18-20. (Canceled)

21. **(Currently Amended)** A low dose method for alleviating at least one symptoms~~symptoms~~ associated with arthritis comprising administering by injection to a subject ~~an~~ a human anti-TNF α antibody, or an antigen-binding portion thereof, in a low dose of 0.01 – 0.1 mg/kg at a frequency of not more than once per week, such that the at least one symptom~~issymptoms~~ are alleviated, wherein the anti-TNF α antibody, or antigen-binding portion thereof, dissociates from human TNF α with a K_d of 1×10^{-8} M or less and a K_{off} rate constant of $1 \times 10^{-3} \text{ s}^{-1}$ or less, both determined by surface plasmon resonance, and neutralizes human TNF α cytotoxicity in a standard *in vitro* L929 assay with an IC_{50} of 1×10^{-7} M or less.

22. **(Previously presented)** The method of claim 21, wherein the arthritis is rheumatoid arthritis.

23. **(Currently Amended)** The method of ~~any one of claims~~ claim 21 or 22, wherein the symptom ~~issymptoms~~ are selected from the group consisting of bone erosion, cartilage erosion, inflammation, and vascularity.

24. **(Currently Amended)** The method of claim 23, wherein the symptom ~~issymptoms~~ are further selected from the group consisting of joint distortion, swelling, joint deformation, ankylosis on ~~flexion~~ flexion, and severely impaired movement.

25-30. **(Canceled)**

31. **(Currently Amended)** The method of ~~any one of claims~~ claim 15 or 21, wherein the anti-TNF α antibody, or an antigen-binding portion thereof, is administered with an additional therapeutic agent.

32-33. **(Canceled)**

34. **(Currently Amended)** The method of any one of claims 15 or 16, wherein the anti-TNF α antibody, or an antigen-binding portion thereof, is ~~either infliximab or D2E7~~.

35. **(Currently Amended)** The method of any one of claims 21 or 22, wherein the anti-TNF α antibody, or an antigen-binding portion thereof, is ~~either infliximab or D2E7~~.

32-41. **(Canceled)**

42. **(Currently Amended)** A low dose method for treating rheumatoid arthritis comprising administering by injection to a subject a low dose of 0.01 – 0.1 mg/kg of a human TNF α antibody, or an antigen-binding portion thereof, at a frequency of not more than once per week such that the rheumatoid arthritis is treated, wherein the anti-TNF α antibody, or antigen-binding portion thereof, dissociates from human TNF α with a K_d of 1×10^{-8} M or less and a K_{off} rate constant of 1×10^{-3} s $^{-1}$ or less, both determined by surface plasmon resonance, and

neutralizes human TNF α cytotoxicity in a standard *in vitro* L929 assay with an IC₅₀ of 1×10^{-7} M or less.

43. **(Currently Amended)** The method of claim 42, wherein rheumatoid arthritis is treated by alleviating at least one symptom~~symptoms~~ selected from the group consisting of bone erosion, cartilage erosion, inflammation, and vascularity,~~are treated.~~

44. **(Canceled)**

45. **(Currently Amended)** The method of claim [44]~~42~~, wherein the anti-TNF α antibody, or antigen-binding portion thereof, is D2E7.

46-47. **(Canceled)**

48. **(Currently Amended)** A low dose method of improving symptoms in the joints of a subject having arthritis comprising administering by injection to the subject a low dose of 0.01-0.1 mg/kg of a human anti-TNF α antibody, or antigen-binding portion thereof, at a frequency of not more than once per week such that at least one symptom selected from the group consisting of inflammation, cartilage erosion, bone erosion, and vascularity is improved, wherein the anti-TNF α antibody, or antigen-binding portion thereof, dissociates from human TNF α with a K_d of 1×10^{-8} M or less and a K_{off} rate constant of 1×10^{-3} s⁻¹ or less, both determined by surface plasmon resonance, and neutralizes human TNF α cytotoxicity in a standard *in vitro* L929 assay with an IC₅₀ of 1×10^{-7} M or less.

49 - 51. **(Canceled)**

52. **(Currently Amended)** A low dose method for treating arthritis comprising administering to a subject ~~a human~~ an anti-TNF α antibody drug selected from the group consisting of D2E7 and enantercept, or an antigen-binding portion thereof, in a low dose of 0.01 - 0.1 - 0.5 mg/kg at a frequency of not more than once per week, such that the arthritis is treated by alleviating at least one symptom selected from the group consisting of bone erosion, cartilage erosion, inflammation, and vascularity.

53. **(Currently Amended)** A low dose method for alleviating at least one symptoms associated with arthritis comprising administering to a subject an effective amount of a human anti-TNF α antibody drug selected from the group consisting of D2E7 and enantercept, or an antigen-binding portion thereof, in a low dose of 0.01—0.1 0.1 - 0.5 mg/kg at a frequency of not more than once per week, such that the at least one symptom issymptoms are alleviated, wherein the at least one symptom selected from the group consisting of bone erosion, cartilage erosion, inflammation, and vascularity.

54. **(New)** A low dose method for treating arthritis comprising administering to a subject an anti-TNF α drug, or an antigen-binding portion thereof, in a low dose of 0.5 – 1.0 mg/kg at a frequency of not more than once per week, such that the arthritis is treated by alleviating at least one symptom selected from the group consisting of bone erosion, cartilage erosion, inflammation, and vascularity.

55. **(New)** A low dose method for alleviating at least one symptom associated with arthritis comprising administering to a subject an effective amount of an anti-TNF α drug, or an antigen-binding portion thereof, in a low dose of 0.5 – 1.0 mg/kg at a frequency of not more than once per week, such that the at least one symptom is alleviated, wherein the at least one symptom selected from the group consisting of bone erosion, cartilage erosion, inflammation, and vascularity.

56. **(New)** The method of claim 54 or 55, wherein the anti-TNF α drug, or an antigen-binding portion thereof, is selected from the group consisting of D2E7, enantercept, and infliximab.